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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/224,583	12/31/1998	MARK CHARLES BEUTNAGEL	BEUTNAGEL-4-	3519

7590 01/12/2004  
MR S H DWORESKY  
AT&T CORP  
P O BOX 4110  
MIDDLETOWN, NJ 07748

EXAMINER

OPSASNICK, MICHAEL N

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 01/12/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/224,583

Applicant(s)

BEUTNAGEL ET AL.

Examiner

Michael N. Opsasnick

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on October 16, 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,12-34 and 36-70 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28,31-34,36-40,43-51 and 57-65 is/are rejected.
- 7) ☒ Claim(s) 20-25,27-30,41,42,52-56 and 66-70 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 20 contains narrative and idiomatic language, in particular the phrase “over and above”, which renders the claim indefinite. Examiner suggests using other phraseology to distinguish the separate video synthesis command signals (for example, ‘...second converter for generating a second set of video synthesis command signals, wherein said second set of video synthesis command signals...’). Clarification is required.

***Allowable Subject Matter***

3. Claims 29,30, 41,42,52-56, and 66-70 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
4. Claims 20,21-25,27,28 are objected to as being dependent upon a rejected base claim, but would be allowable if, a) claim 20 is rewritten to overcome the 112 second rejection above, and b) rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1,2,12-19,26,31-34,36-40,43-51,57-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art in view of Bothe (Audio to Audio-Video Speech Conversion with the Help of Phonetic Knowledge Integration (IEEE, Jan. 1997).

Applicant's Admitted Prior Art(the prior art sections of applicant's spec., pp. 1-3, pertaining to the MPEG 4 standard) teaches a TTS stream input into a decoder, thru a synthesizer, and into a compositor (see Fig. 1 of applicant's specification). Furthermore, applicant's admitted prior art teaches FAPS and a FACE model into a FRM to be input to the compositor (Fig. 1). Applicant's admitted prior art also teaches the definition of the FAP's (pp 2 of applicant's specification), including 10 groups of parameters (ranging from different parts of the face, along with viseme information). The information with respect to the FAP's is used along with decoded audio information, to produce an animated video synthesized with the audio (applicant's admitted prior art, pp. 3, lines 22-26).

{As a side note, throughout applicant's admitted prior art description on pps. 1-6 of the specification, applicant stresses that the novelty of the instant invention is the use of phonemes, derived from the "tts stream decoder" output, generating FAPS to be input into the FRM, for eventual synthesis (applicant's specification, pp 2 lines 3-5, pp 4 lines 10-11, and pp. 5 lines 3-5; and pp 6 lines 1-6).}

To summarize, applicant's admitted prior art teaches a systems with a TTS stream into a decoder, synthesizer, and compositor, along with a face model and FAPS into the compositor such that the output of the compositor is a synthesized audio/visual, wherein the timing of the audio and visual information is derived from the streams (applicant's admitted prior art, pp 3 lines 22-28).

Applicant's admitted prior art does not explicitly teach the use of phonemes, derived from the decoded output of the TTS stream, to provide more FAP information into the FRM (into the COMPOSITOR) for synthesis. Bothe (Audio to.....), however, teaches the derivation of phonemes from a TTS stream (using a transform) to influence the animation of the phoneme (Fig. 1, pp 1632, second column; pp 1635, second column – page 1637, end of second column before 'Conclusion and Future Work). Therefore, it would have been obvious to one of ordinary skill in the art of speech animation to modify the teachings of Applicant's Admitted Prior Art, as explained above, with phoneme based animation information because it would advantageously produce an illusion of a mouth moving to generate the sounds heard by synchronizing audio playback of a phoneme with display of a mouth shape corresponding to the phoneme, for application such as video telephones and lipreading training (Bothe (Audio to.....), abstract).

As per claims 1 and 2,12,14,16,31,33 the combination of Applicant's Admitted Prior Art in view of Bothe (Audio to.....) teaches a decoder responsive to an input signal comprising text and FAP information (applicant's admitted prior art), generating addition FAP information from phoneme information to add to the FAP information (applicant's 'Bothe (Audio to.....)' admitted prior art, as demonstrated above), and a face rendering module responsive to the face model and decoder output (applicant's admitted prior art)

As per claims 17,23,36, the combination of Applicant's Admitted Prior Art in view of Bothe (Audio to.....) teaches FAP based command signals (applicant's admitted prior art)

As per claims 34,37 the combination of Applicant's Admitted Prior Art in view of Bothe (Audio to.....) teaches prosody and timing information (Bothe (Audio to.....), pp 1635, bottom paragraph to pp 1636, bottom)

As per claims 2,24,25, the combination of Applicant's Admitted Prior Art in view of Bothe (Audio to.....) teaches basic FAPS (applicant's admitted prior art – non-viseme based, and other grouping of FAPS).

As per claims 13,15,18,19,32, the combination of Applicant's Admitted Prior Art in view of Bothe (Audio to.....) teaches sound, encoded voice, sound synthesizer, text, video synthesizer, and face model information (applicant's admitted prior art).

As per claims 26-28, 38-40, the combination of Applicant's Admitted Prior Art in view of Bothe (Audio to.....) teaches an interpolated signal including phoneme, timing,

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and command information (Bothe (Audio to.....) data structure, Fig. 12, the neural networked derived information, as applied to applicant's admitted prior art structure)

As per claims 16,20-22,43 and 57, the combination of Applicant's admitted prior art in view of Bothe (Audio to.....) teaches receiving an input that includes text specification, FAP information, output synthesized voice (applicant's admitted prior art), phoneme output with addition information (applicant's admitted prior art modified by Bothe (Audio to.....) teachings, Bothe (Audio to.....), Fig. 1, as pointed to above), generating a sequence of facial animation parameters from signals of said second output (applicant's 'Bothe (Audio to.....)' admitted prior art), and rendering images from the output signal and combining the synthesized voice and images (applicant's fig. 1, FRM, synthesizer, and compositor).

As per claims 44 and 58, applicant's admitted prior art teaches receiving the input from a remote locations via a network

As per claims 45 and 59, the combination of Applicant's Admitted Prior Art in view of Bothe (Audio to.....) teaches bookmarks marking phoneme boundaries (Fig. 12).

As per claims 46 and 60, the combination of Applicant's Admitted Prior Art in view of Bothe (Audio to.....) teaches information about the FAP's (applicant's admitted prior art of groupings of FAP's).

As per claims 47 and 61, the combination of Applicant's Admitted Prior Art in view of Bothe (Audio to.....) teaches amplitude information (applicant's admitted prior art, pp2 lines 10-13 of applicant's specification)

As per claims 48 and 62, the combination of Applicant's Admitted Prior Art in view of Bothe (Audio to.....) teaches duration (Bothe (Audio to.....), pp 1636, first column, frame length)

As per claims 49-51 and 63-65, the combination of Applicant's Admitted Prior Art in view of Bothe (Audio to.....) teaches a specified transition path, chosen by the animation module based on phoneme information via the bookmark (pp 1636, the computer animation based on the phoneme input sequence and key vectors and the MLP).

### ***Response to Arguments***

7. Applicant's arguments filed 10/16/2003 have been fully considered but they are not persuasive. As per the arguments on page 12 of the response (first three paragraphs), examiner responds that applicant is arguing the newly amended claim language → please see the rejections given above. As per applicant's arguments pertaining to a TTS stream on page 12, examiner notes that the claim language pertains to text and FAP information, not a TTS stream. As per applicant's comments with respect to the combination of applicant's admitted prior art and the Bothe reference (on the bottom of page 12 to top of page 13 of the response), examiner argues that the statements made by the applicant's representative is pure conjecture and speculation, especially pertaining to 'No skilled artisan.....'. Furthermore, examiner points to the stated reason for combining the two references as shown above. As per applicant's arguments on page 13 of the response with respect to commingling, examiner points to the referred passage of applicant's admitted prior art (page 5, lines 3-6), teaching co-mingled information of the input



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stream. As per applicant's arguments on top of page 14 of the response with respect to non-viseme FAP's, examiner points to applicant's admitted prior art teaching non-viseme FAPS (page 2 of applicant's specification, lines 28-30). As per applicant's arguments in the middle of page 14 of the response, examiner argues that a detailed explanation of the combination of prior art on pages 3-4 of the previous office action provides a clear base of applicant's admitted prior art referrals as applied to the claim language. As per applicant's arguments with respect to audio and video signals, examiner argues that applicant's admitted prior art (the MPEG 4 standard), has both audio and video system signals. As per applicant's arguments on page 16 with respect to interpolation, examiner argues that a second definition of interpolating (by Riverside Webster's II dictionary) is 'to determine a value of a function between known values by a procedure or algorithm different from that specified function itself', which is taught by the referred passage of Bothe. As per the similar arguments presented on page 16 to page 19 of the response corresponding to the addressed arguments on page 12-16 of the response, examiner offers likewise corresponding rebuttals to these arguments presented above.

### *Conclusion*

**8. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

**9. Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(703) 872 9314,

(for informal or draft communications, please label "PROPOSED" or "DRAFT")

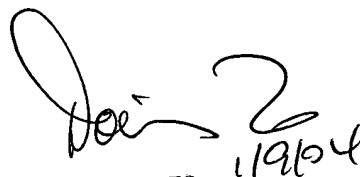
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Opsasnick, telephone number (703)305-4089, who is available Tuesday-Thursday, 9AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To, can be reached at (703)305-4827. The facsimile phone number for this group is (703)872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (703) 305-4750, the 2600 Customer Service telephone number is (703) 306-0377.

mno  
1/9/2004

  
DORIS H. TO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600